



msi[™]

**PH61A-P35 (B3)/
PH61-P33 (B3)/
PH61-SP35 (B3)
series**

MS-7732 (v1.x) Mainboard

Copyright Notice

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Revision History

Revision	Revision History	Date
V1.0	First release for PCB 1.X	2011/04

Technical Support

If a problem arises with your system and no solution can be obtained from the user's manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance.

- ☐ Visit the MSI website for technical guide, BIOS updates, driver updates, and other information: <http://www.msi.com/service/download>
- ☐ Contact our technical staff at: <http://support.msi.com>

Safety Instructions

- Always read the safety instructions carefully.
- Keep this User's Manual for future reference.
- Keep this equipment away from humidity.
- Lay this equipment on a reliable flat surface before setting it up.
- The openings on the enclosure are for air convection hence protects the equipment from overheating. **DO NOT COVER THE OPENINGS.**
- Make sure the voltage of the power source is at 110/220V before connecting the equipment to the power inlet.
- Place the power cord such a way that people can not step on it. Do not place anything over the power cord.
- Always Unplug the Power Cord before inserting any add-on card or module.
- All cautions and warnings on the equipment should be noted.
- Never pour any liquid into the opening that can cause damage or cause electrical shock.
- If any of the following situations arises, get the equipment checked by service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated into the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work well or you can not get it work according to User's Manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious sign of breakage.

DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT ABOVE 60°C (140°F), IT MAY DAMAGE THE EQUIPMENT.

CAUTION: There is a risk of explosion, if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.

警告使用者:

這是甲類資訊產品，在居住的環境中使用時，可能會造成無線電干擾，在這種情況下，使用者會被要求採取某些適當的對策。



廢電池請回收

For better environmental protection, waste batteries should be collected separately for recycling special disposal.

FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the measures listed below.



- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

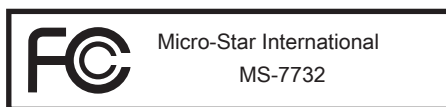
Notice 1

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) this device may not cause harmful interference, and
- 2) this device must accept any interference received, including interference that may cause undesired operation.

WEEE (Waste Electrical and Electronic Equipment) Statement

ENGLISH

To protect the global environment and as an environmentalist, MSI must remind you that...



Under the European Union ("EU") Directive on Waste Electrical and Electronic Equipment, Directive 2002/96/EC, which takes effect on August 13, 2005, products of "electrical and electronic equipment" cannot be discarded as municipal wastes anymore, and manufacturers of covered electronic equipment will be obligated to take back such products at the end of their useful life. MSI will comply with the product take back requirements at the end of life of MSI-branded products that are sold into the EU. You can return these products to local collection points.

DEUTSCH

Hinweis von MSI zur Erhaltung und Schutz unserer Umwelt

Gemäß der Richtlinie 2002/96/EG über Elektro- und Elektronik-Altgeräte dürfen Elektro- und Elektronik-Altgeräte nicht mehr als kommunale Abfälle entsorgt werden. MSI hat europaweit verschiedene Sammel- und Recyclingunternehmen beauftrag, die in die Europäische Union in Verkehr gebrachten Produkte, am Ende seines Lebenszyklus zurückzunehmen. Bitte entsorgen Sie dieses Produkt zum gegebenen Zeitpunkt ausschliesslich an einer lokalen Altgerätesammelstelle in Ihrer Nähe.

FRANÇAIS

En tant qu'écologiste et afin de protéger l'environnement, MSI tient à rappeler ceci...

Au sujet de la directive européenne (EU) relative aux déchets des équipement électriques et électroniques, directive 2002/96/EC, prenant effet le 13 août 2005, que les produits électriques et électroniques ne peuvent être déposés dans les décharges ou tout simplement mis à la poubelle. Les fabricants de ces équipements seront obligés de récupérer certains produits en fin de vie. MSI prendra en compte cette exigence relative au retour des produits en fin de vie au sein de la communauté européenne. Par conséquent vous pouvez retourner localement ces matériels dans les points de collecte.

РУССКИЙ

Компания MSI предпринимает активные действия по защите окружающей среды, поэтому напоминаем вам, что....

В соответствии с директивой Европейского Союза (ЕС) по предотвращению загрязнения окружающей среды использованным электрическим и электронным оборудованием (директива WEEE 2002/96/EC), вступающей в силу 13 августа 2005 года, изделия, относящиеся к электрическому и электронному оборудованию, не могут рассматриваться как бытовой мусор, поэтому производители вышеперечисленного электронного оборудования обязаны принимать его для переработки по окончании срока службы. MSI обязуется соблюдать требования по приему продукции, проданной под маркой MSI на территории ЕС, в переработку по окончании срока службы. Вы можете вернуть эти изделия в специализированные пункты приема.

ESPAÑOL

MSI como empresa comprometida con la protección del medio ambiente, recomienda: Bajo la directiva 2002/96/EC de la Unión Europea en materia de desechos y/o equipos electrónicos, con fecha de rigor desde el 13 de agosto de 2005, los productos clasificados como "eléctricos y equipos electrónicos" no pueden ser depositados en los contenedores habituales de su municipio, los fabricantes de equipos electrónicos, están obligados a hacerse cargo de dichos productos al termino de su período de vida. MSI estará comprometido con los términos de recogida de sus productos vendidos en la Unión Europea al final de su periodo de vida. Usted debe depositar estos productos en el punto limpio establecido por el ayuntamiento de su localidad o entregar a una empresa autorizada para la recogida de estos residuos.

NEDERLANDS

Om het milieu te beschermen, wil MSI u eraan herinneren dat....

De richtlijn van de Europese Unie (EU) met betrekking tot Vervuiling van Electrische en Electronische producten (2002/96/EC), die op 13 Augustus 2005 in zal gaan kunnen niet meer beschouwd worden als vervuiling. Fabrikanten van dit soort producten worden verplicht om producten retour te nemen aan het eind van hun levenscyclus. MSI zal overeenkomstig de richtlijn handelen voor de producten die de merknaam MSI dragen en verkocht zijn in de EU. Deze goederen kunnen geretourneerd worden op lokale inzamelingspunten.

SRPSKI

Da bi zaštitili prirodnu sredinu, i kao preduzeće koje vodi računa o okolini i prirodnoj sredini, MSI mora da vas podesti da...

Po Direktivi Evropske unije ("EU") o odbačenju eelektronskoj i električnoj opremi, Direktiva 2002/96/EC, koja stupa na snagu od 13. Avgusta 2005, proizvodi koji spadaju pod "elektronsku i električnu opremu" ne mogu više biti odbačeni kao običan otpad i proizvođači ove opreme biće prinuđeni da uzmu natrag ove proizvode na kraju njihovog uobičajenog veka trajanja. MSI će poštovati zahtev o preuzimanju ovakvih proizvoda kojima je istekao vek trajanja, koji imaju MSI oznaku i koji su prodati u EU. Ove proizvode možete vratiti na lokalnim mestima za prikupljanje.

POLSKI

Aby chronić nasze środowisko naturalne oraz jako firma dbająca o ekologię, MSI przypomina, że...

Zgodnie z Dyrektywą Unii Europejskiej ("UE") dotyczącą odpadów produktów elektrycznych i elektronicznych (Dyrektywa 2002/96/EC), która wchodzi w życie 13 sierpnia 2005, tzw. "produkty oraz wyposażenie elektryczne i elektroniczne" nie mogą być traktowane jako śmieci komunalne, tak więc producenci tych produktów będą zobowiązani do odbierania ich w momencie gdy produkt jest wycofywany z użycia. MSI wypełni wymagania UE, przyjmując produkty (sprzedawane na terenie Unii Europejskiej) wycofywane z użycia. Produkty MSI będzie można zwracać w wyznaczonych punktach zbiorczych.

TÜRKÇE

Çevreci özelliğiyle bilinen MSI dünyada çevreyi korumak için hatırlatır:

Avrupa Birliği (AB) Kararnamesi Elektrik ve Elektronik Malzeme Atığı, 2002/96/EC Kararnamesi altında 13 Ağustos 2005 tarihinden itibaren geçerli olmak üzere, elektrikli ve elektronik malzemeler diğer atıklar gibi çöpe atılamayacak ve bu elektronik cihazların üreticileri, cihazların kullanım süreleri bittikten sonra ürünleri geri toplamakla yükümlü olacaktır. Avrupa Birliği'ne satılan MSI markalı ürünlerin kullanım süreleri bittiğinde MSI ürünlerin geri alınması isteği ile işbirliği içerisinde olacaktır. Ürünlerinizi yerel toplama noktalarına bırakabilirsiniz.

ČESKY

Záleží nám na ochraně životního prostředí - společnost MSI upozorňuje...

Podle směrnice Evropské unie ("EU") o likvidaci elektrických a elektronických výrobků 2002/96/EC platné od 13. srpna 2005 je zakázáno likvidovat "elektrické a elektronické výrobky" v běžném komunálním odpadu a výrobci elektrických výrobků, na které se tato směrnice vztahuje, budou povinni odebírat takové výrobky zpět po skončení jejich životnosti. Společnost MSI splní požadavky na odebírání výrobků značky MSI, prodávaných v zemích EU, po skončení jejich životnosti. Tyto výrobky můžete odevzdat v místních sběrnách.

MAGYAR

Annak érdekében, hogy környezetünket megvédjük, illetve környezetvédként fellépve az MSI emlékezteti Önt, hogy ...

Az Európai Unió („EU”) 2005. augusztus 13-án hatályba lépő, az elektromos és elektronikus berendezések hulladékairól szóló 2002/96/EK irányelve szerint az elektromos és elektronikus berendezések többé nem kezelhetőek lakossági hulladékként, és az ilyen elektronikus berendezések gyártói kötelessé válnak az ilyen termékek visszavételére azok hasznos élettartama végén. Az MSI betartja a termék visszavétellel kapcsolatos követelményeket az MSI márkanév alatt az EU-n belül értékesített termékek esetében, azok élettartamának végén. Az ilyen termékeket a legközelebbi gyűjtőhelyre viheti.

ITALIANO

Per proteggere l'ambiente, MSI, da sempre amica della natura, ti ricorda che....

In base alla Direttiva dell'Unione Europea (EU) sullo Smaltimento dei Materiali Elettrici ed Elettronici, Direttiva 2002/96/EC in vigore dal 13 Agosto 2005, prodotti appartenenti alla categoria dei Materiali Elettrici ed Elettronici non possono più essere eliminati come rifiuti municipali: i produttori di detti materiali saranno obbligati a ritirare ogni prodotto alla fine del suo ciclo di vita. MSI si adegnerà a tale Direttiva ritirando tutti i prodotti marchiati MSI che sono stati venduti all'interno dell'Unione Europea alla fine del loro ciclo di vita. È possibile portare i prodotti nel più vicino punto di raccolta

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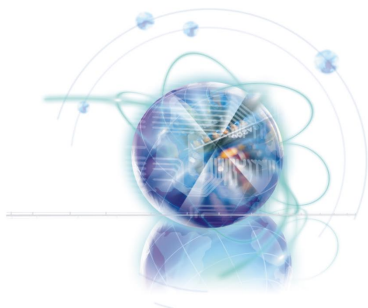
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Chapter 1

Getting Started

Thank you for choosing the **PH61A-P35 (B3)/ PH61-P33 (B3)/ PH61-SP35 (B3)** Series (MS-7732 v1.X) ATX mainboard. These Series mainboards are based on **Intel® H61** chipsets for optimal system efficiency. Designed to fit the advanced **Intel® LGA1155** processor, these Series deliver a high performance and professional desktop platform solution.

Mainboard Specifications

Processor Support

- Intel® Core™ i7/ Core™ i5 /Core™ i3/ Pentium®/ Celeron® processor in the LGA1155 package
(For the latest information about CPU, please visit <http://www.msi.com/service/cpu-support>)

Chipset

- Intel® H61 chipset

Memory Support

- 2 DDR3 DIMMs support DDR3 1333/ 1066 DRAM (16GB Max)
- Supports Dual-Channel mode
(For more information on compatible components, please visit <http://www.msi.com/service/test-report>)

LAN

- Supports LAN 10/100/1000 by Realtek® RTL8111E

Audio

- HD audio codec integrated by Realtek® ALC887
- Flexible 8-channel audio with jack sensing

SATA

- 4 SATA 3Gb/s (SATA1~4) ports by Intel® H61 PCH (PH61A-P35 (B3)/ PH61-P33 (B3))
- 2 SATA 3Gb/s (SATA1~2) ports by Intel® H61 PCH (PH61-SP35 (B3))
- 2 SATA 6Gb/s (SATA5~6) ports ASMedia® ASM1061 (PH61A-P35 (B3))

USB 3.0 (PH61A-P35 (B3))

- 2 USB 3.0 rear IO ports by ASMedia® ASM1042

Connectors

- Back panel
 - 1 PS/2 keyboard port
 - 1 PS/2 mouse port
 - 2 USB 3.0 ports (PH61A-P35 (B3))
 - 4 USB 2.0 ports (PH61A-P35 (B3)/ PH61-SP35 (B3))
 - 6 USB 2.0 ports (PH61-P33 (B3))
 - 1 VGA port*
 - 1 DVI-D port* (PH61A-P35 (B3)/ PH61-SP35 (B3))
 - 1 LAN port
 - 6 flexible audio ports (PH61A-P35 (B3)/ PH61-P33 (B3))
 - 3 flexible audio ports** (PH61-SP35 (B3))

*(The VGA & DVI-D ports only work with Integrated Graphics Processor)

** (If the mainboard, which equips 3 audio jacks, wants to reach the 8-channel sound effect, the 7th and 8th channels must be output from front panel.)

■ On-Board

- 2 USB 2.0 connectors (PH61A-P35 (B3)/ PH61-P33 (B3))
- 1 USB 2.0 connectors (PH61-SP35 (B3))
- 1 Chassis Intrusion connector
- 1 S/PDIF-Out connector
- 1 Front Panel Audio connector
- 1 TPM Module connector (PH61A-P35 (B3)/ PH61-P33 (B3))
- 1 Serial port connector
- 1 Parallel port connector

Slots

- 1 PCIe x16 slot
- 2 PCIe x1 slots
- 3 PCI slots

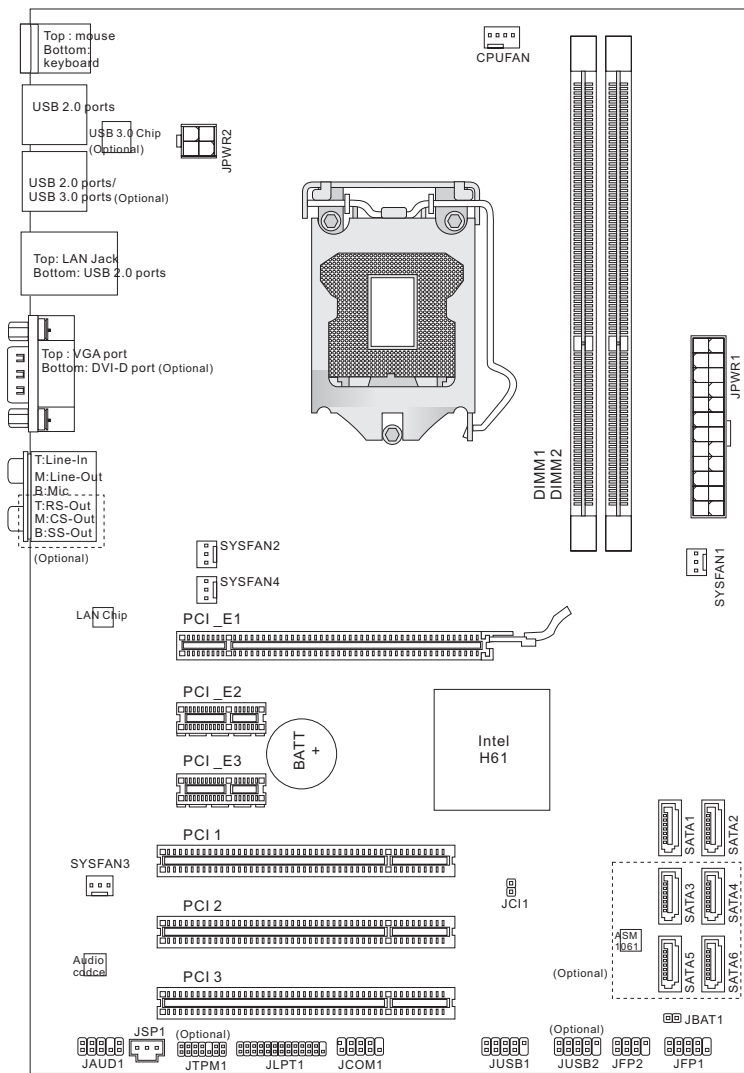
Form Factor

- ATX (30.5 cm X 20.5 cm)

Mounting Screw Holes

- 6 mounting screw holes

Mainboard Layout



**PH61A-P35 (B3)/ PH61-P33 (B3)/ PH61-SP35 (B3) Series
(MS-7732 v1.X) ATX Mainboard**

Packing Contents



Mainboard



Driver / Utility
DVD



User Guide



Back IO Shield



SATA Cable

Optional Accessories



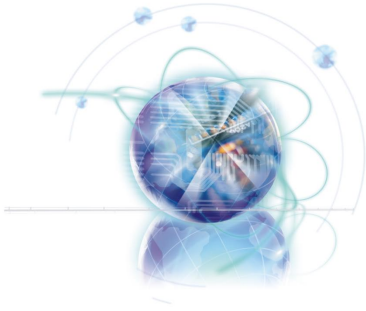
SATA Power
Cable

* These pictures are for reference only and may vary without notice.

* The packing contents may vary according to the model you purchased.

* If you need to purchase the optional accessories, please visit <http://www.msi.com/index.php> to inquire the part numbers or consult the dealer.





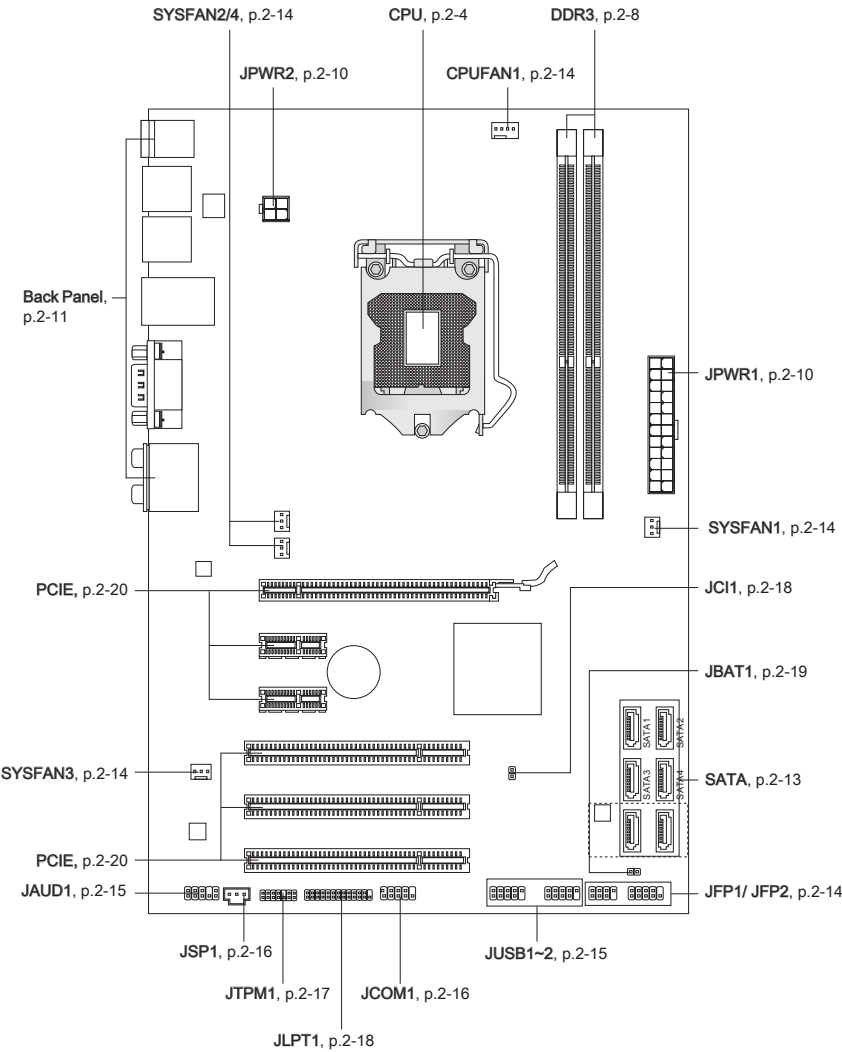
Chapter 2

Hardware Setup

This chapter provides you with the information about hardware setup procedures. While performing the installation, be careful in holding the components and following the installation procedures. For some components, if you install in the wrong orientation, the components will not work properly.

Use a grounded wrist strap before handling computer components. Static electricity may damage the components.

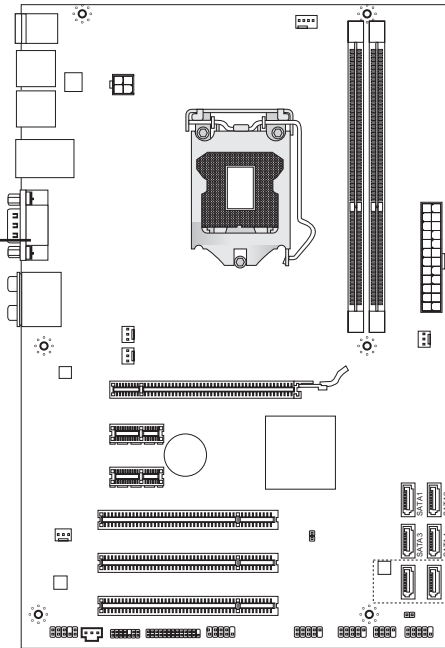
Quick Components Guide



Mounting Screw Holes

When you install the mainboard, you have to place the mainboard into the chassis in the correct direction. The locations of screws holes on the mainboard are shown as below.

The side has to toward the rear, the position for the I/O shield of the chassis.



Refer above picture to install standoffs in the appropriate locations on chassis and then screw through the mainboard screw holes into the standoffs.

Important

- To prevent damage to the mainboard, any contact between the mainboard circuit and chassis or unnecessary standoffs mounted on the chassis is prohibited.
- Please make sure there are no metal components placed on the mainboard or within the chassis that may cause short circuit of the mainboard.

CPU (Central Processing Unit)

When you are installing the CPU, make sure to install the cooler to prevent overheating. If you do not have the CPU cooler, consult your dealer before turning on the computer. For the latest information about CPU, please visit <http://www.msi.com/service/cpu-support>

Important

Overheating

Overheating will seriously damage the CPU and system. Always make sure the cooling fan can work properly to protect the CPU from overheating. Make sure that you apply an even layer of thermal paste (or thermal tape) between the CPU and the heatsink to enhance heat dissipation.

Replacing the CPU

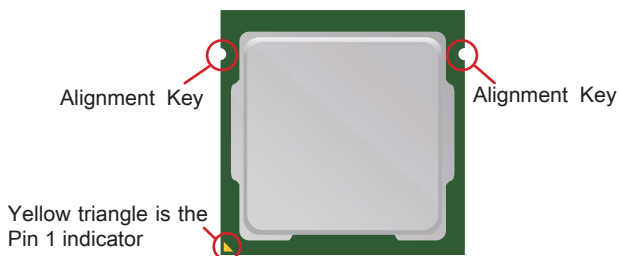
While replacing the CPU, always turn off the ATX power supply or unplug the power supply's power cord from the grounded outlet first to ensure the safety of CPU.

Overclocking

This mainboard is designed to support overclocking. However, please make sure your components are able to tolerate such abnormal setting, while doing overclocking. Any attempt to operate beyond product specifications is not recommended. We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.

Introduction to LGA 1155 CPU

The surface of LGA 1155 CPU. Remember to apply some thermal paste on it for better heat dispersion.

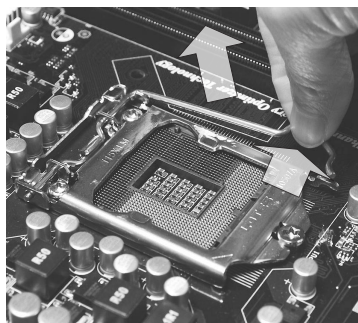
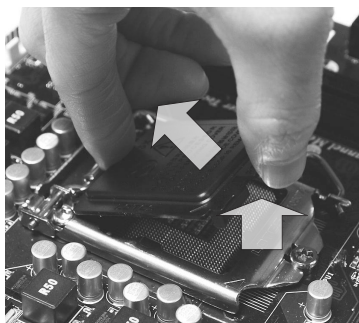


CPU & Cooler Installation

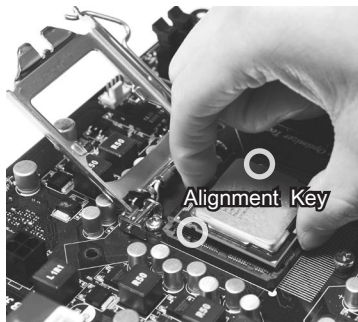
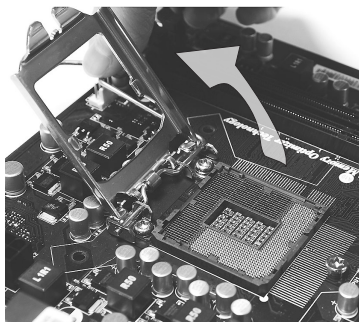
When you are installing the CPU, **make sure the CPU has a cooler attached on the top to prevent overheating.** Meanwhile, do not forget to apply some thermal paste on CPU before installing the heat sink/cooler fan for better heat dispersion.

Follow the steps below to install the CPU & cooler correctly. Wrong installation will cause the damage of your CPU & mainboard.

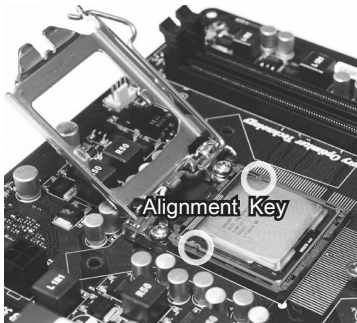
1. The CPU socket has a plastic cap on it to protect the contact from damage. Before you install CPU, always cover it to protect the socket pin. Remove the cap (as the arrow shows).
2. Open the load level.



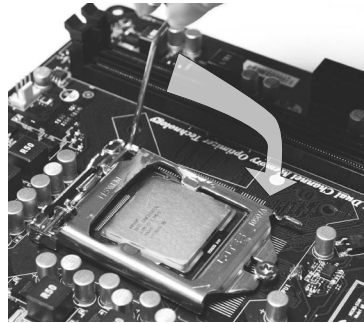
3. Lift the load lever up to fully open position.
4. After confirming the CPU direction for correct mating, put down the CPU in the socket housing frame. Be sure to grasp on the edge of the CPU base. Note that the alignment keys are matched.



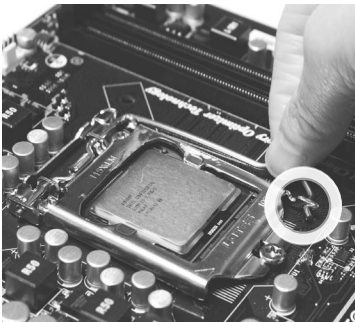
5. Visually inspect if the CPU is seated well into the socket. If not, take out the CPU with pure vertical motion and reinstall.



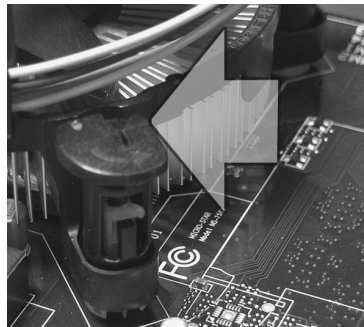
6. Engage the load lever while pressing down lightly onto the load plate.



7. Secure the lever near the hook end under the retention tab.



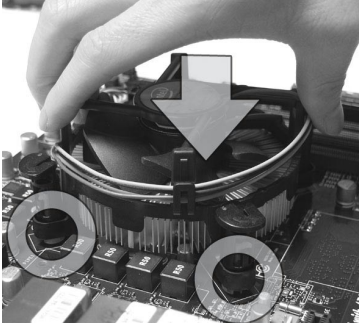
8. Make sure the four hooks are in proper position before you install the cooler.



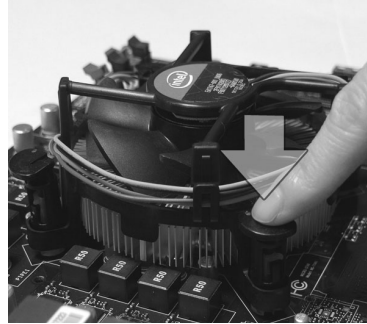
Important

- Confirm if your CPU cooler is firmly installed before turning on your system.
- Do not touch the CPU socket pins to avoid damaging.

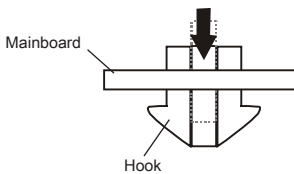
9. Align the holes on the mainboard with the heatsink. Push down the cooler until its four clips get wedged into the holes of the mainboard.



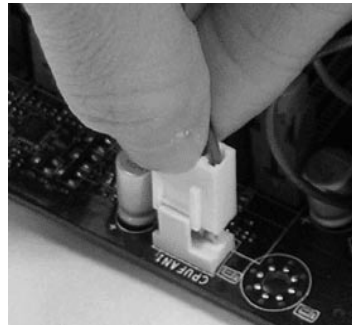
10. Press the four hooks down to fasten the cooler.



11. Turn over the mainboard to confirm that the clip-ends are correctly inserted.



12. Finally, attach the CPU Fan cable to the CPU fan connector on the mainboard.

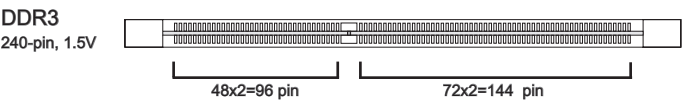


Important

- Read the CPU status in BIOS.
- Whenever CPU is not installed, always protect your CPU socket pin with the plastic cap covered (shown in Figure 1) to avoid damaging.
- Mainboard photos shown in this section are for demonstration of the CPU/ cooler installation only. The appearance of your mainboard may vary depending on the model you purchase.
- Please refer to the documentation in the CPU fan package for more details about the CPU fan installation.

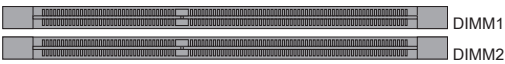
Memory

These DIMM slots are used for installing memory modules. For more information on compatible components, please visit <http://www.msi.com/service/test-report>



Dual-Channel mode Population Rule

In Dual-Channel mode, the memory modules can transmit and receive data with two data bus lines simultaneously. Enabling Dual-Channel mode can enhance the system performance. The following illustrations explain the population rules for Dual-Channel mode.

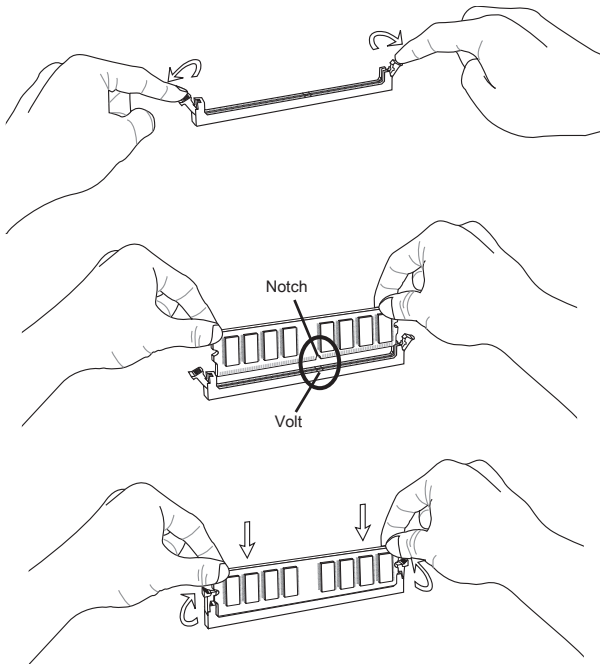


Important

- *DDR3 memory modules are not interchangeable with DDR2, and the DDR3 standard is not backwards compatible. You should always install DDR3 memory modules in the DDR3 DIMM slots.*
- *In Dual-Channel mode, make sure that you install memory modules of the **same type and density** in different channel DIMM slots.*
- *Due to the chipset resource deployment, the system density will only be detected up to 15+GB (not full 16GB) when each DIMM is installed with a 8GB memory module.*

Installing Memory Modules

1. The memory module has only one notch on the center and will only fit in the right orientation.
2. Insert the memory module vertically into the DIMM slot. Then push it in until the golden finger on the memory module is deeply inserted in the DIMM slot. The plastic clip at each side of the DIMM slot will automatically close when the memory module is properly seated.
3. Manually check if the memory module has been locked in place by the DIMM slot clips at the sides.



Important

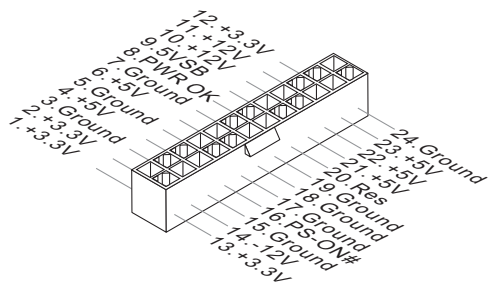
You can barely see the golden finger if the memory module is properly inserted in the DIMM slot.

Power Supply

ATX 24-pin Power Connector: JPWR1

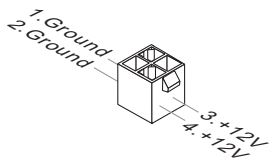
This connector allows you to connect an ATX 24-pin power supply. To connect the ATX 24-pin power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.

You may use the 20-pin ATX power supply as you like. If you'd like to use the 20-pin ATX power supply, please plug your power supply along with pin 1 & pin 13.



ATX 4-pin Power Connector: JPWR2

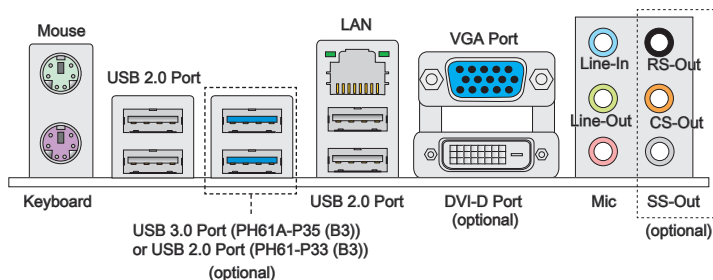
This connector is used to provide the power output to the CPU.



Important

Make sure that all the connectors are connected to proper ATX power supplies to ensure stable operation of the mainboard.

Back Panel



► Mouse/Keyboard

The standard PS/2® mouse/keyboard DIN connector is for a PS/2® mouse/keyboard.

► USB 2.0 Port

The USB 2.0 port is for attaching USB devices such as keyboard, mouse, or other USB-compatible devices.

► USB 3.0 Port (optional)

USB 3.0 port is backward-compatible with USB 2.0 devices. Supports data transfer rate up to 5 Gbit/s (SuperSpeed).

Important

If you want to use a USB 3.0 device, you must use the USB 3.0 cable to connect to the USB 3.0 port.

► VGA Port

The DB15-pin female connector is provided for monitor.

► DVI-D Port (optional)

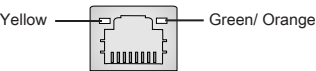
The DVI-D (Digital Visual Interface - Digital) connector allows you to connect a LCD monitor. It provides a high-speed digital interconnection between the computer and its display device. To connect a LCD monitor, simply plug your monitor cable into the DVI-D connector, and make sure that the other end of the cable is properly connected to your monitor (refer to your monitor manual for more information.)

Important

The VGA and DVI-D display interfaces on the mainboard are designed to serve as IGP (Integrated Graphics Processor) used. If you installed a processor without integrated graphics chip, these display ports will have no effect.

► LAN

The standard RJ-45 LAN jack is for connection to the Local Area Network (LAN). You can connect a network cable to it.



LED	Color	LED State	Condition
Left	Yellow	Off	LAN link is not established.
		On(Steady state)	LAN link is established.
		On(brighter & pulsing)	The computer is communicating with another computer on the LAN.
Right	Green	Off	10 Mbit/sec data rate is selected.
		On	100 Mbit/sec data rate is selected.
	Orange	On	1000 Mbit/sec data rate is selected.

► Audio Ports

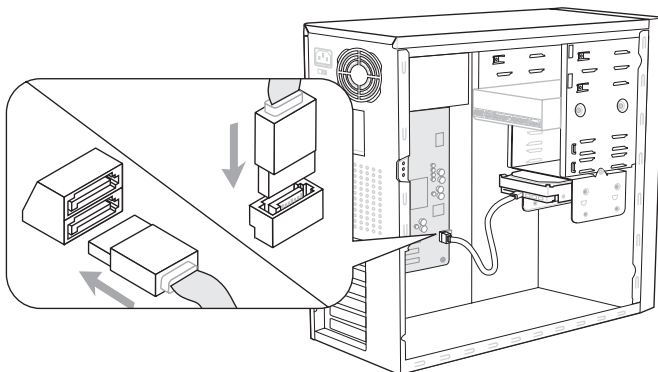
These audio connectors are used for audio devices. It is easy to differentiate between audio effects according to the color of audio jacks.

- Line-In: Blue - Line In, is used for external CD player, tape-player or other audio devices.
- Line-Out: Green - Line Out, is a connector for speakers or headphones.
- Mic: Pink - Mic, is a connector for microphones.
- RS-Out (optional): Black - Rear-Surround Out in 4/ 5.1/ 7.1 channel mode.
- CS-Out (optional): Orange - Center/ Subwoofer Out in 5.1/ 7.1 channel mode.
- SS-Out (optional): Gray - Side-Surround Out 7.1 channel mode.

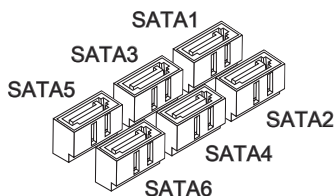
Connectors

Serial ATA Connector: SATA1~6 (SATA3~6 are optional)

This connector is a high-speed Serial ATA interface port. Each connector can connect to one Serial ATA device.



* The MB layout in this figure is for reference only.



SATA1~4 (3Gb/s, by H61)

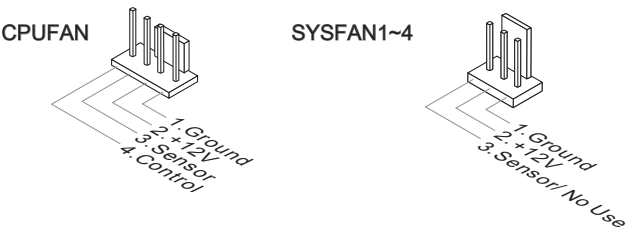
SATA5~6 (6Gb/s, by ASM1061)

Important

Please do not fold the Serial ATA cable into a 90-degree angle. Otherwise, data loss may occur during transmission.

Fan Power Connectors: CPUFAN, SYSFAN1~4

The fan power connectors support system cooling fan with +12V. When connecting the wire to the connectors, always note that the red wire is the positive and should be connected to the +12V; the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.

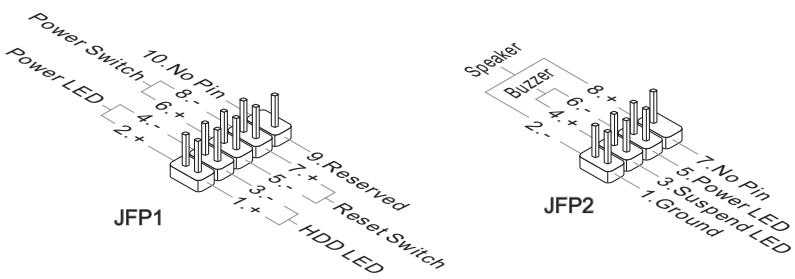


Important

- Please refer to the recommended CPU fans at processor's official website or consult the vendors for proper CPU cooling fan.
- CPUFAN support Smart fan control. You can install **Control Center** utility that will automatically control the CPUFAN speeds according to the actual CPUFAN temperatures.
- Fan cooler set with 3 or 4 pins power connector are both available for CPUFAN.

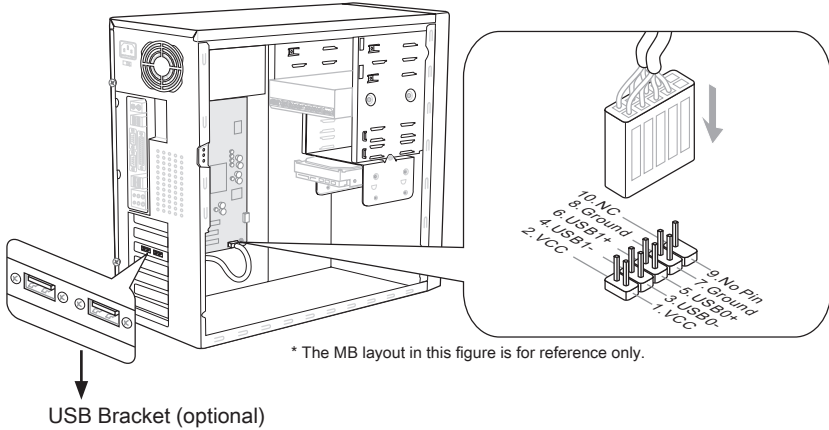
Front Panel Connectors: JFP1, JFP2

These connectors are for electrical connection to the front panel switches and LEDs. The JFP1 is compliant with Intel® Front Panel I/O Connectivity Design Guide.



Front USB Connector: JUSB1~2 (JUSB2 is optional)

This connector, compliant with Intel® I/O Connectivity Design Guide, is ideal for connecting high-speed USB interface peripherals such as USB HDD, digital cameras, MP3 players, printers, modems and the like.

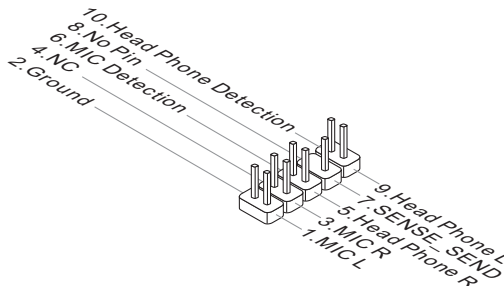


Important

Note that the pins of VCC and GND must be connected correctly to avoid possible damage.

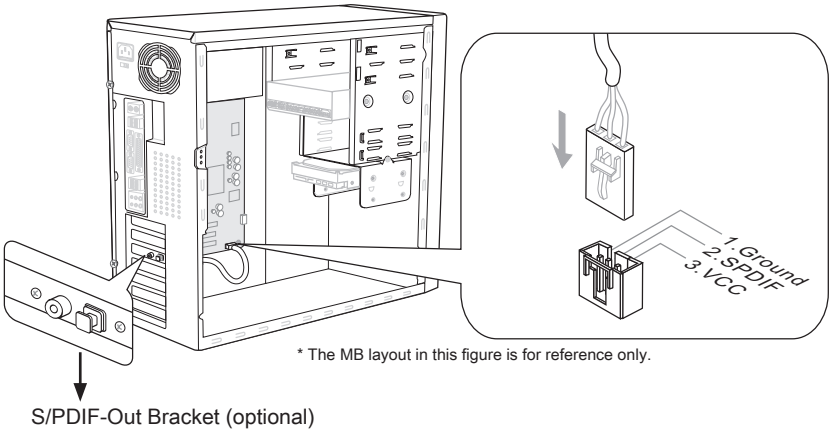
Front Panel Audio Connector: JAUD1

This connector allows you to connect the front panel audio and is compliant with Intel® Front Panel I/O Connectivity Design Guide.



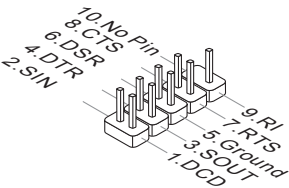
S/PDIF-Out Connector: JSP1

This connector is used to connect S/SPDIF (Sony & Philips Digital Interconnect Format) interface for digital audio transmission.



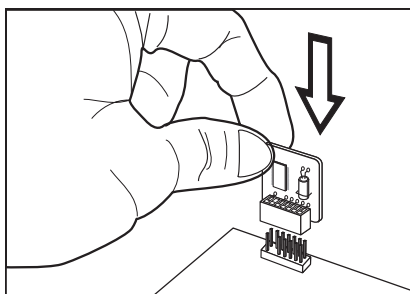
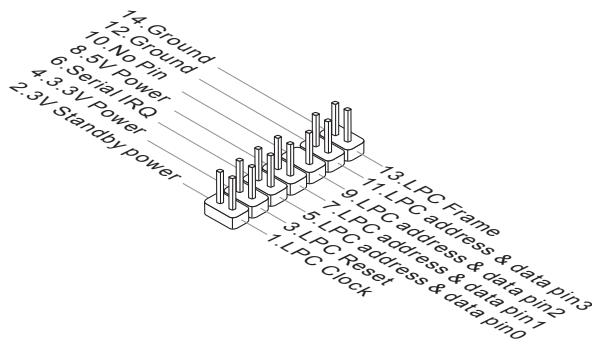
Serial Port Connector: JCOM1

This connector is a 16550A high speed communication port that sends/receives 16 bytes FIFOs. You can attach a serial device.



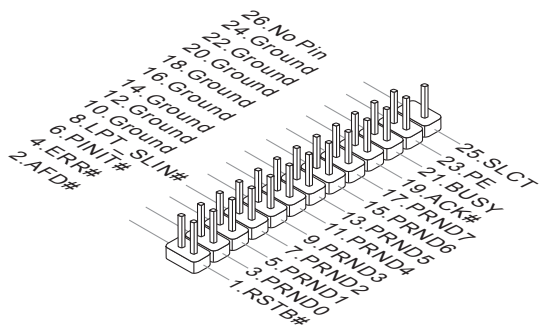
TPM Module connector: JTPM1 (optional)

This connector connects to a TPM (Trusted Platform Module) module (optional). Please refer to the TPM security platform manual for more details and usages.



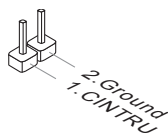
Parallel Port Connector: JLPT1

This connector is used to connect an optional parallel port bracket. The parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.



Chassis Intrusion Connector: JCI1

This connector connects to the chassis intrusion switch cable. If the chassis is opened, the chassis intrusion mechanism will be activated. The system will record this status and show a warning message on the screen. To clear the warning, you must enter the BIOS utility and clear the record.



Jumper

Clear CMOS Jumper: JBAT1

There is a CMOS RAM on board with an external battery power supply to preserve the system configuration data. With the CMOS RAM, the system can automatically boot OS every time it is turned on. If you want to clear the system configuration, please temporarily short these two pins to clear data by using a metal object.



Keep Data



Clear Data

(Use a metal object to temporarily short these two pins.)

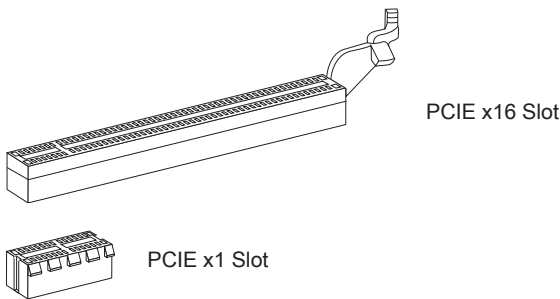
Important

You can clear CMOS by touching two pins once with a metal object while the system is off. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

Slots

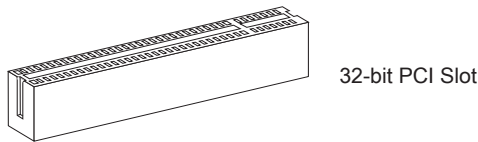
PCIe (Peripheral Component Interconnect Express) Slot

The PCIe slot supports the PCIe interface expansion card.



PCI (Peripheral Component Interconnect) Slot

The PCI slot supports LAN card, SCSI card, USB card, and other add-on cards that comply with PCI specifications.



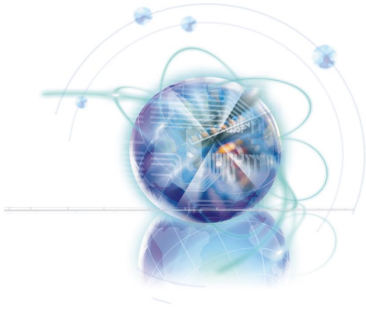
Important

When adding or removing expansion cards, make sure that you unplug the power supply first. Read the documentation for the expansion card to configure any necessary hardware or software settings, such as jumpers, switches or BIOS configuration.

PCI Interrupt Request Routing

IRQ, or interrupt request line, are hardware lines over which devices can send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus pins as follows:

	Order1	Order2	Order3	Order4
PCI Slot 1	INT A#	INT B#	INT C#	INT D#
PCI Slot 2	INT B#	INT C#	INT D#	INT A#
PCI Slot 3	INT C#	INT D#	INT A#	INT B#



Chapter 3

BIOS Setup

This chapter provides information on the BIOS Setup program and allows you to configure the system for optimum use.

You may need to run the Setup program when:

- An error message appears on the screen during the system booting up, and requests you to run SETUP.
- You want to change the default settings for customized features.

Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press key to enter Setup.

Press DEL to enter Setup Menu, F11 to enter Boot Menu

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Important

- The items under each BIOS category described in this chapter are under continuous update for better system performance. Therefore, the description may be slightly different from the latest BIOS and should be held for reference only.
- Upon boot-up, the 1st line appearing after the memory count is the BIOS version. It is usually in the format:

E7732IMS.xxx 022811 where:

1st digit refers to BIOS type as E = EFI

2nd - 5th digit refers to the model number.

6th digit refers to the chipset as I = Intel, N = nVidia, A = AMD and V = VIA.

7th - 8th digit refers to the customer as MS = all standard customers.

xxx refers to the BIOS version.

022811 refers to the date this BIOS was released.

Control Keys

<↑><↓>	Select Item
<←><→>	Select Screen
<Enter>	Select
<Esc>	Jumps to the Exit menu or returns to the main menu from a submenu
<+><->	Change Option
<F1>	General Help
<F6>	Load Optimized Defaults
<F10>	Save all the CMOS changes and exit

Getting Help

After entering the Setup menu, the first menu you will see is the Main Menu.

Main Menu

The main menu lists the setup functions you can make changes to. You can use the arrow keys (↑ ↓) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

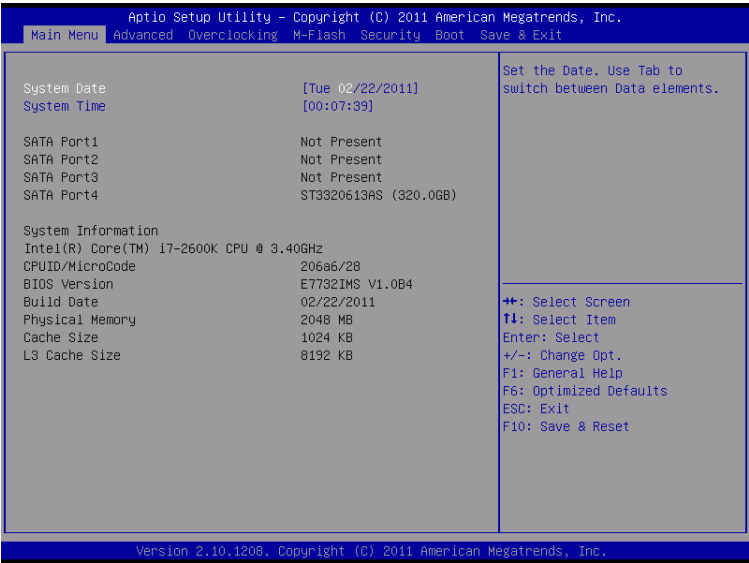
Sub-Menu

If you find a right pointer symbol (as shown in the right view) appears to the left of certain fields that means a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. You can use arrow keys (↑ ↓) to highlight the field and press <Enter> to call up the sub-menu. Then you can use the control keys to enter values and move from field to field within a sub-menu. If you want to return to the main menu, just press the <Esc>.

General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

The Menu Bar



► **Main Menu**

Use this menu for basic system configurations, such as time, date etc.

► **Advanced**

Use this menu to setup the items of the BIOS special enhanced features, integrated peripherals, power management and PC health status.

► **Overclocking**

Use this menu to specify your settings for frequency/voltage control and overclocking.

► **M-Flash**

Use this menu to read/ flash the BIOS from storage drive (FAT/ FAT32 format only).

► **Security**

Use this menu to set supervisor and user passwords.

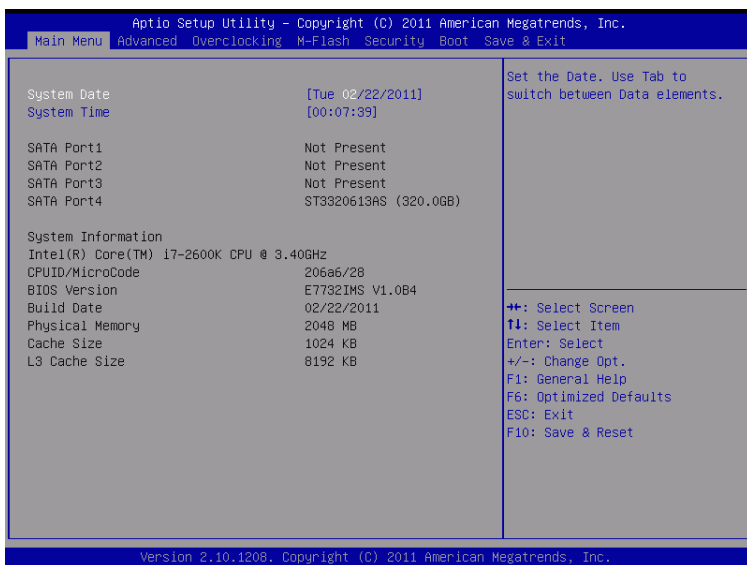
► **Boot**

Use this menu to specify the priority of boot devices.

► **Save & Exit**

This menu allows you to load the BIOS default values or factory default settings into the BIOS and exit the BIOS setup utility with or without changes.

Main Menu



► System Date

This allows you to set the system to the date that you want (usually the current date). The format is <day><month> <date> <year>.

[day]	Day of the week, from Sun to Sat, determined by BIOS. Read-only.
[month]	The month from Jan. through Dec.
[date]	The date from 1 to 31 can be keyed by numeric function keys.
[year]	The year can be adjusted by users.

► System Time

This allows you to set the system time that you want (usually the current time). The time format is <hour> <minute> <second>.

► SATA Port1~6

Press <Enter> to enter the sub-menu. The sub-menu shows the information of installed SATA device.

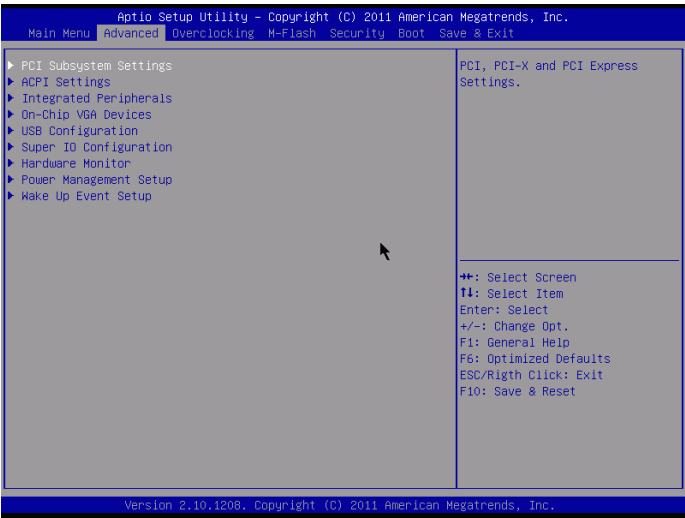
Important

SATA Port1~6 are appearing when you connect the HD devices to the SATA connectors on the mainboard.

► System Information

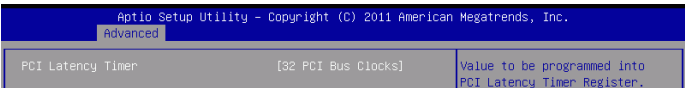
This area shows the CPU information, BIOS version and memory status of your system (read only).

Advanced



► PCI Subsystem Settings

Press <Enter> to enter the sub-menu.

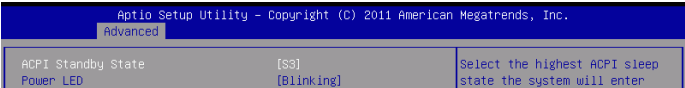


► PCI Latency Timer

This item controls how long each PCI device can hold the bus before another takes over. When set to higher values, every PCI device can conduct transactions for a longer time and thus improve the effective PCI bandwidth. For better PCI performance, you should set the item to higher values.

► ACPI Settings

Press <Enter> to enter the sub-menu.



► ACPI Standby State

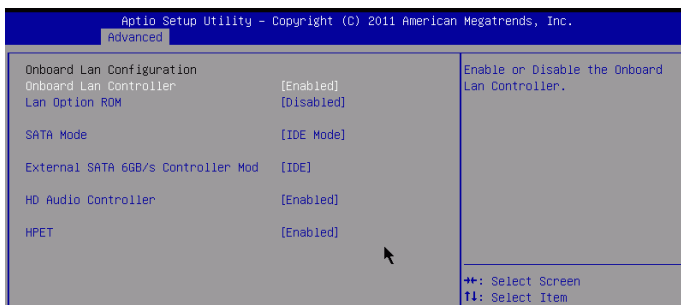
This item specifies the power saving modes for ACPI function.

► Power LED

This item configures how the system uses power LED on the case to indicate the sleep/suspend state.

► Integrated Peripherals

Press <Enter> to enter the sub-menu.



► Onboard Lan Controller

This item allows you to enable/ disable the onboard LAN controller.

► LAN Option ROM

This item is used to decide whether to invoke the Boot ROM of the onboard LAN.

► SATA Mode

This item is used to specify the mode for SATA port.

► External SATA 6GB/s Controller Mode

This item is used to specify the mode for SATA 6Gb/s port.

► HD Audio Controller

This item allows you to enable/ disable the HD audio controller.

► HPET

The HPET (High Precision Event Timers) is a component that is part of the chipset. You can enable it, and will provide you with the means to get to it via the various ACPI methods.

► On-Chip VGA Devices

Press <Enter> to enter the sub-menu.



► Initiate Graphic Adapter

This setting specifies which graphic card is the initial graphics adapter.

► Integrated Graphics Share Memory

The system shares memory to the onboard graphic. This setting controls the exact memory size shared to the onboard graphic.

► **DVMT Memory**

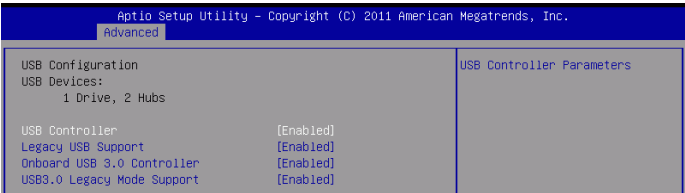
Specify the size of DVMT memory to allocate for video memory.

► **IGD Multi-Monitor**

When “Enabled”, the integrated graphics and extra graphics card can be configured as multi-monitor mode.

► **USB Configuration**

Press <Enter> to enter the sub-menu.



► **USB Devices:**

This item shows the type of installed USB device.

► **USB Controller**

This item allows you to enable/ disable the onchip USB controller.

► **Legacy USB Support**

Select [Enabled] if you need to use a USB2.0-interfaced device in the operating system.

► **Onboard USB 3.0 Controller**

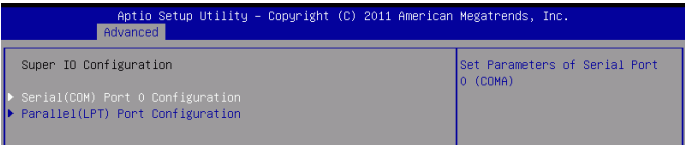
This item allows you to enable/ disable the onboard USB 3.0 controller.

► **USB3.0 Legacy mode Support**

Select [Enabled] if you need to use a USB3.0-interfaced device in the operating system.

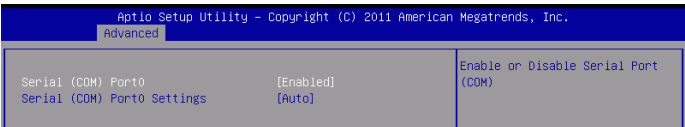
► **Super IO Configuration**

Press <Enter> to enter the sub-menu.



► **Serial (COM) Port 0 Configuration**

Press <Enter> to enter the sub-menu.



► Serial (COM) Port0

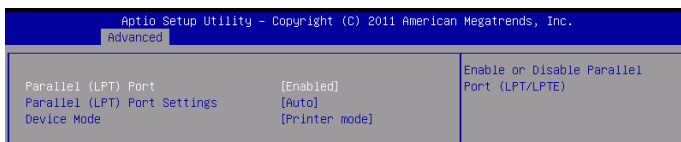
This item allows you to enable/ disable the serial port.

► Serial (COM) Port0 Settings

Select an address and corresponding interrupt for the serial port.

► Parallel (LPT) Port Configuration

Press <Enter> to enter the sub-menu.



► Parallel (LPT) Port

This item allows you to enable/ disable the parallel port.

► Parallel (LPT) Port Settings

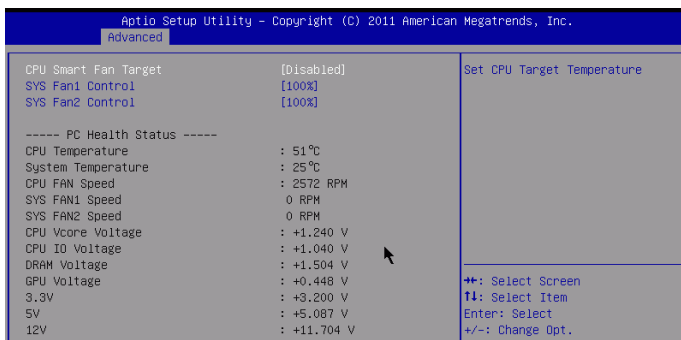
Select an address and corresponding interrupt for the serial port.

► Device Mode

Select a device mode for parallel port.

► Hardware Monitor

Press <Enter> to enter the sub-menu.



► CPU Smart Fan Target

The Smart Fan function controls the CPU fan speed automatically depending on the current temperature to keep it within a specific range. You can enable a fan target value here. If the current CPU fan temperature reaches the target value, the smart fan function will be activated.

► SYS Fan 1 Control/ SYS Fan2 Control

These items allow users to select how percentage of speed for the SYSFAN1/ SYS-FAN2.

- CPU/ System Temperature, CPU FAN/ SYS FAN 1/ 2 Speed, CPU Vcore Voltage, CPU IO Voltage, DRAM Voltage, GPU Voltage, 3.3V, 5V, 12V

These items show the current status of all of the monitored hardware devices/components such as CPU voltage, temperatures and all fans' speeds.

► Power Management Setup

Press <Enter> to enter the sub-menu.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Advanced		
EuP 2013	[Enabled]	EuP 2013
Restore after AC Power Loss	[Power off]	
CPU Phase Control	[Intel SVID Mode]	

► EuP 2013

This item is designed for energy using products lot 6 2013 (EuP) aka energy related products (ErP); to reduce power consumption during system off or standby mode. Note: Enabling EuP 2013 will disable support for RTC Wake Up Event.

► Restore after AC Power Loss

This item specifies whether your system will reboot after a power failure or interrupt occurs. Settings are:

- [Power Off] Always leaves the computer in the power off state.
- [Power On] Always leaves the computer in the power on state.
- [Last State] Restore the system to the status before power failure or interrupt occurred.

► CPU Phase Control

This item allows you to select the power phase mode to reach the best power saving function.

► Wake Up Event Setup

Press <Enter> to enter the sub-menu.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Advanced		
Setup Wake Up Configuration		Wake Up Event By
Wake Up Event By	[BIOS]	
Resume By RTC Alarm	[Disabled]	
Resume By PCI or PCI-E Device	[Disabled]	
Resume From S3 by USB Device	[Disabled]	
Resume From S3/S4/S5 by PS/2 Mouse	[Disabled]	
Resume From S3/S4/S5 by PS/2 KB	[Disabled]	

► Wake Up Event By

Setting to [BIOS] activates the following fields, and use the following fields to set the wake up events. Setting to [OS], the wake up events will be defined by OS.

► Resume By RTC Alarm

The field is used to enable or disable the feature of booting up the system on a scheduled time/date.

► **Date/ HH:MM:SS**

If Resume By RTC Alarm is set to [Enabled], the system will automatically resume (boot up) on a specific date/hour/minute/second specified in these fields (using the <+> and <-> to select the date & time settings).

► **Resume By PCI or PCI-E Device**

The item allows the activity of the PCI/ PCI-E device to wake up the system.

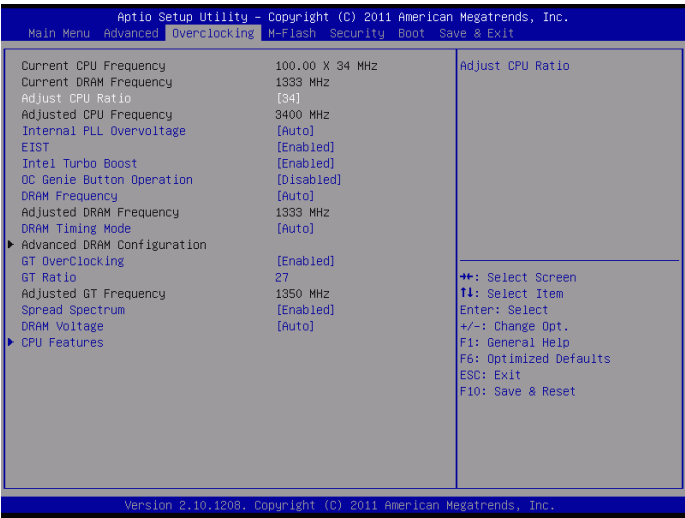
► **Resume From S3 by USB Device**

The item allows the activity of the USB device to wake up the system from S3 (Suspend to RAM) sleep state.

► **Resume From S3/S4/S5 by PS/2 Mouse/ KB**

These items determine whether the system will be awakened from S3/S4/S5 state when input signal of the PS/2 mouse/ keyboard is detected.

Overclocking



► **Current CPU / DRAM Frequency**

These items show the current clocks of CPU and Memory speed. Read-only.

► **Adjust CPU Ratio**

This item controls the multiplier that is used to determine the internal clock speed of the processor relative to the external or motherboard clock speed. It is available only when the processor supports this function.

► **Adjusted CPU Frequency**

It shows the adjusted CPU frequency. Read-only.

► **Internal PLL Overvoltage**

This item are used to adjust the PLL voltage.

► **EIST**

The Enhanced Intel SpeedStep technology allows you to set the performance level of the microprocessor whether the computer is running on battery or AC power. This field will appear after you installed the CPU which supports speedstep technology.

► **Intel Turbo Booster**

This item will appear when you install a CPU with Intel Turbo Boost technology. This item is used to enable/ disable Intel Turbo Boost technology. It can scale processor frequency higher dynamically when applications demand more performance and TDP headroom exists. It also can deliver seamless power scalability (Dynamically scale up, Speed-Step Down). It is the Intel newly technology within newly CPU.

► OC Genie Button Operation

This field is used to enable/ disable OC Genie function.

► DRAM Frequency

This setting controls the memory frequency to enable the memory to run at different frequency combinations.

► Adjusted DRAM Frequency

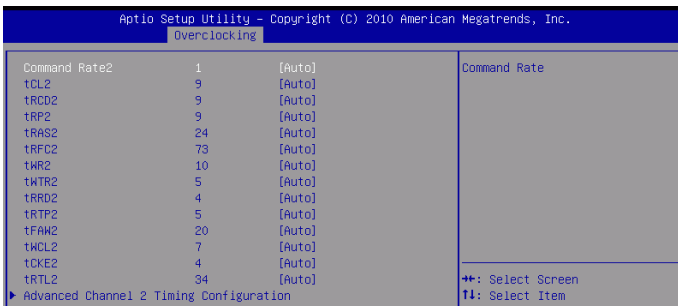
It shows the adjusted DRAM frequency. Read-only.

► DRAM Timing Mode

Select whether DRAM timing is controlled by the SPD (Serial Presence Detect) EEPROM on the DRAM module. Setting to [Auto] enables DRAM timings and the following “Advanced DRAM Configuration” sub-menu to be determined by BIOS based on the configurations on the SPD. Selecting [Link] or [Unlink] allows users to configure the DRAM timings and the following related “Advanced DRAM Configuration” sub-menu manually.

► Advanced DRAM Configuration

Press <Enter> to enter the sub-menu.



► Command Rate

This setting controls the DRAM command rate.

► tCL

This controls the CAS latency, which determines the timing delay (in clock cycles) before SDRAM starts a read command after receiving it.

► tRCD

When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe). The less the clock cycles, the faster the DRAM performance.

► tRP

This setting controls the number of cycles for Row Address Strobe (RAS) to be allowed to precharge. If insufficient time is allowed for the RAS to accumulate its charge before DRAM refresh, refreshing may be incomplete and DRAM may fail to retain data. This item applies only when synchronous DRAM is installed in the system.

► tRAS

This setting determines the time RAS takes to read from and write to memory cell.

► tRFC

This setting determines the time RFC takes to read from and write to a memory cell.

► tWR

Minimum time interval between end of write data burst and the start of a precharge command. Allows sense amplifiers to restore data to cells.

► tWTR

Minimum time interval between the end of write data burst and the start of a column-read command. It allows I/O gating to overdrive sense amplifiers before read command starts.

► tRRD

Specifies the active-to-active delay of different banks.

► tRTP

Time interval between a read and a precharge command.

► tFAW

This item is used to set the tFAW (four activate window delay) timing.

► tWCL

This item is used to set the tWCL (Write CAS Latency) timing.

► tCKE

This item is used to set the tCKE timing.

► tRTL

This item is used to set the tRTL timing.

► Advanced Channel 1/ 2 Timing Configuration

Press <Enter> to enter the sub-menu. And you can set the advanced memory timing for each channel.

► GT OverClocking

This item allows you to enable/ disable the overclocking of integrated graphics.

► GT Ratio

This setting controls the ratio of integrated graphics frequency to enable the integrated graphics to run at different frequency combinations.

► Adjusted GT Frequency

It shows the adjusted integrated graphics frequency. Read-only.

► Spread Spectrum

When the motherboard's clock generator pulses, the extreme values (spikes) of the pulses create EMI (Electromagnetic Interference). The Spread Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves.

Important

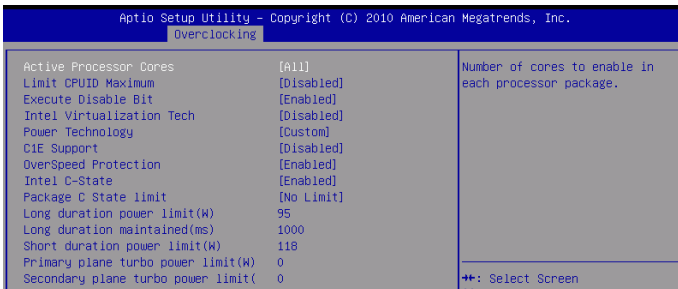
- If you do not have any EMI problem, leave the setting at [Disabled] for optimal system stability and performance. But if you are plagued by EMI, select the value of Spread Spectrum for EMI reduction.
- The greater the Spread Spectrum value is, the greater the EMI is reduced, and the system will become less stable. For the most suitable Spread Spectrum value, please consult your local EMI regulation.
- Remember to disable Spread Spectrum if you are overclocking because even a slight jitter can introduce a temporary boost in clock speed which may just cause your over-clocked processor to lock up.

► DRAM Voltage

This item is used to adjust the memory voltage.

► CPU Features

Press <Enter> to enter the sub-menu.

**► Active Processor Cores**

This item allows you to select the number of active processor cores.

► Limit CPUID Maximum

It is designed to limit the listed speed of the processor to older operating systems.

► Execute Disable Bit

Intel's Execute Disable Bit functionality can prevent certain classes of malicious "buffer overflow" attacks when combined with a supporting operating system. This functionality allows the processor to classify areas in memory by where application code can execute and where it cannot. When a malicious worm attempts to insert code in the buffer, the processor disables code execution, preventing damage or worm propagation.

► Intel Virtualization Tech

This item is used to enable/disable the Intel Virtualization technology. For further information please refer to Intel's official website.

► Power Technology

This item allows you to select the Intel Dynamic Power technology mode.

► C1E Support

To enable this item to read the CPU power consumption while idle. Not all processors support Enhanced Halt state (C1E).

► OverSpeed Protection

Overspeed Protection function can monitor the current CPU draws as well as its power consumption. If it exceeds a certain level, the processor automatically reduces its clock speed. If you want to overclock your CPU, set it to [Disabled].

► Intel C-State

C-state is a power management state that significantly reduces the power of the processor during idle. This field will appear after you installed the CPU which supports c-state technology.

► Package C State limit

This field allows you to select a C-state limit.

► Long duration power limit(W)

This field allows you to adjust the TDP power limit for the long duration.

► Long duration maintained(ms)

This field allows you to adjust the maintaining time for long duration power limit.

► Short duration power limit(W)

This field allows you to adjust the TDP power limit for the short duration.

► Primary/ Secondary plane turbo power limit (W)

These fields allow you to adjust the TDP limit for the primary/ secondary plane turbo.

M-Flash



► BIOS Boot Function

This allows you to enable/ disable the system to boot from the BIOS file inside USB drive (FAT/ 32 format only).

► Select UEFI file to boot from

When the BIOS Boot function as sets to [Enabled], this item is selectable. This item allows to select particular BIOS file from the USB/ Storage (FAT/ 32 format only) drive. And the system will boot from selected BIOS file.

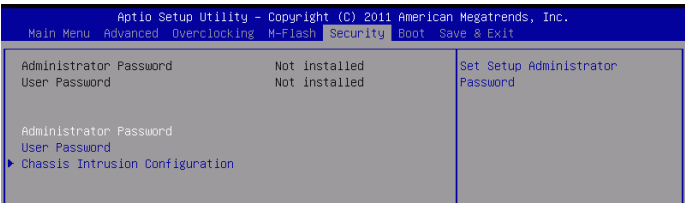
► Save current UEFI rom to file

Please setup a specific folder in specific USB/ Storage drive to save BIOS file from BIOS ROM chip data. Note: it only supports FAT/ 32 file system drive.

► Select UEFI file to flash

This item allows you to select particular BIOS file from the USB/ Storage (FAT/ 32 format only) drive for updating BIOS.

Security



► **Administrator Password**

This item is used to set the administrator password. When a administrator password has been set, you will be prompted to enter it every time you try to enter BIOS Setup.

► **User Password**

This item is used to set the user password. When a user password has been set, you will be prompted to enter it every time you try to enter the operating system.

Important

When you select the Administrator Password / User Password item, a password box will appear on the screen. Type the password, and press <Enter>. The password typed now will replace any previously set password from CMOS memory. You will be prompted to confirm the password. Retype the password and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To clear a set password, just press <Enter> when you are prompted to enter the password. A message will show up confirming the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup/ OS without entering any password.

These two items prevent an unauthorized person from changing any part of your system configuration.

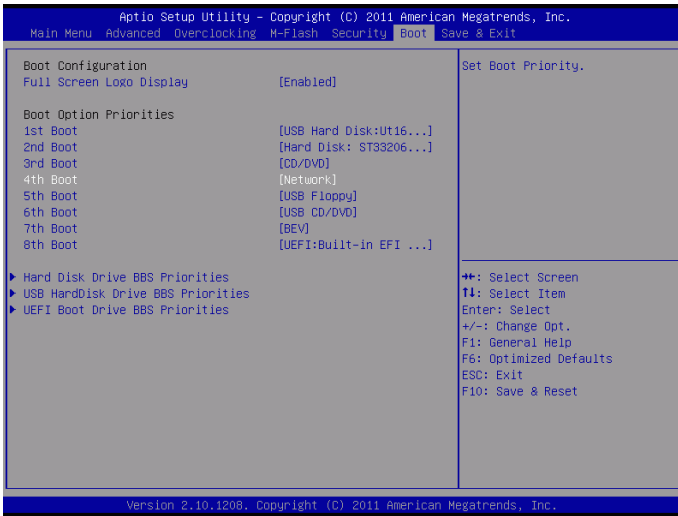
► **Chassis Intrusion Configuration**

Press <Enter> to enter the sub-menu.

► **Chassis Intrusion**

This item enables or disables the feature of recording the chassis intrusion status and issuing a warning message if the chassis is once opened. To clear the warning message, set the field to [Reset]. The setting of the field will automatically return to [Enabled] later.

Boot



► Full Screen Logo Display

This item enables this system to show the company logo on the boot-up screen. Settings are:

- [Enabled] Shows a still image (logo) on the full screen at boot.
- [Disabled] Shows the POST messages at boot.

== Set Boot Priority ==

► 1st~8th Boot

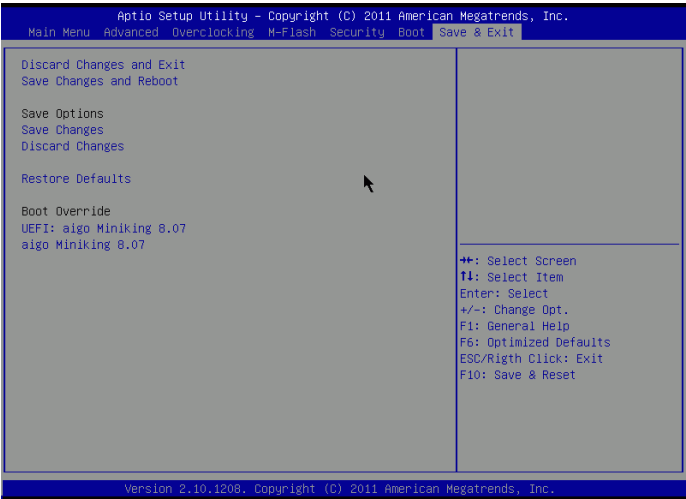
You can select the boot priorities in these Boot Option items.

► Hard Disk/ USB HardDisk/ UEFI Boot Drive BBS Priorities

► Boot Option

You can select the hard disk/ USB hard disk/ UEFI Boot priorities in these Boot Option items.

Save & Exit



► **Discard Changes and Exit**

Use this item to abandon all changes and exit setup.

► **Save Changes and Reboot**

Use this item to save changes and reboot the system.

► **Save Changes**

Use this item to save changes.

► **Discard Changes**

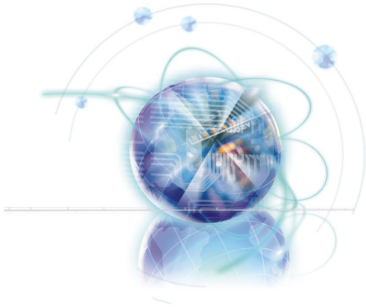
Use this item to abandon all changes.

► **Restore Defaults**

Use this item to load the optimized default values set by the BIOS vendor.

== Boot Override ==

The installed storage devices will appear on this menu, you can select one of them be a boot device.



Appendix A

Realtek Audio

The Realtek audio provides 10-channel DAC that simultaneously supports 7.1 sound playback and 2 channels of independent stereo sound output (multiple streaming) through the Front-Out-Left and Front-Out-Right channels.

Installing the Realtek HD Audio Driver

You need to install the HD audio driver for Realtek audio codec to function properly before you can get access to 2-, 4-, 6-, 8- channel or 7.1+2 channel audio operations. Follow the procedures described below to install the drivers for different operating systems.

Installation for Windows®

For Windows® XP, you must install Windows® XP Service Pack3 or later before installing the driver.

The following illustrations are based on Windows®7 environment and could look slightly different if you install the drivers in different operating systems.

1. Insert the application DVD into the DVD-ROM drive. The setup screen will automatically appear.
2. Click Driver tab.
3. Click AUDIO button.



4. Select Realtek HD Audio Drivers to start installing the drivers.
5. Click Next to install the Realtek High Definition Audio Driver.
6. Follow the on-screen instructions to install drivers.
7. Click Finish to restart the system.

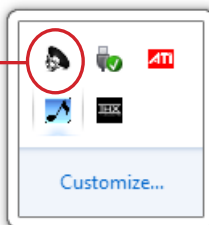
Important

The HD Audio Configuration software utility is under continuous update to enhance audio applications. Hence, the program screens shown here in this section may be slightly different from the latest software utility and shall be held for reference only.

Software Configuration

After installing the audio driver, the “Realtek HD Audio Manager” icon will appear at the notification area (lower right of the screen). You may double click the icon and the GUI will pop up accordingly.

Double click the icon



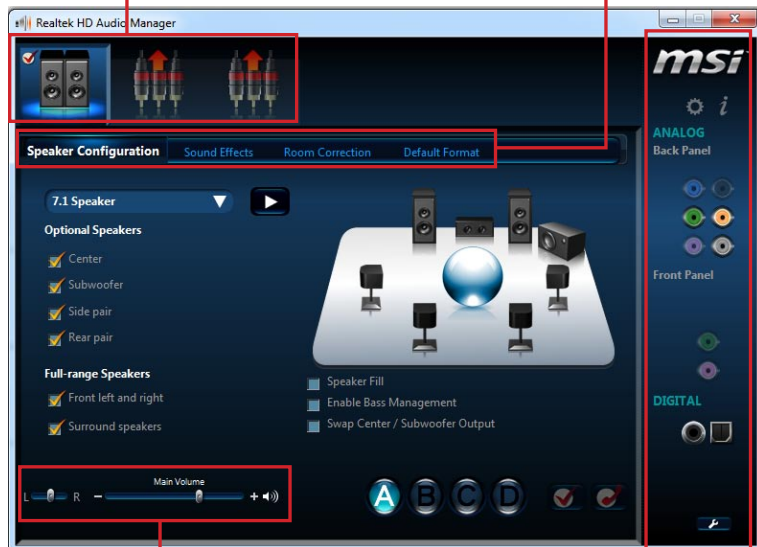
It is also available to enable the audio driver by clicking the Realtek HD Audio Manager from the Control Panel.

Software panel overview

The following figure describes the function of the Realtek HD Audio Manager panel.

Device Selection

Application Enhancement



Volume Adjustment

Jack status panel

■ Device Selection

Here you can select a audio output source to change the related options. The “check” sign (in orange) indicates the devices as default.

■ Volume Adjustment

You can control the volume or balance the right/left side of the speakers that you plugged in front or rear panel by adjust the bar.

■ Application Enhancement

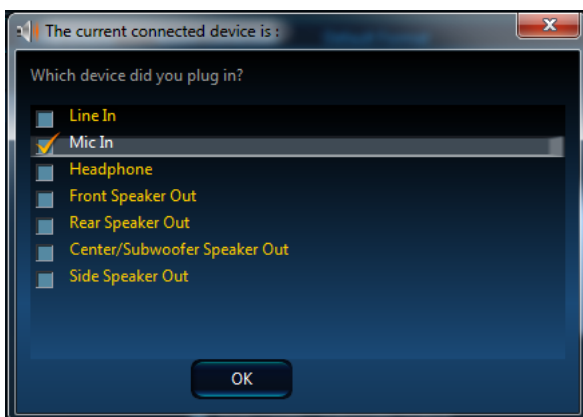
The array of options will provide you a complete guidance of anticipated sound effect for both output and input device.

■ Jack status panel

This panel depicts all render and capture devices currently connected with your computer.

Auto popup dialog

When you plug into the device at the jack, a dialogue window will pop up asking you which device is current connected.

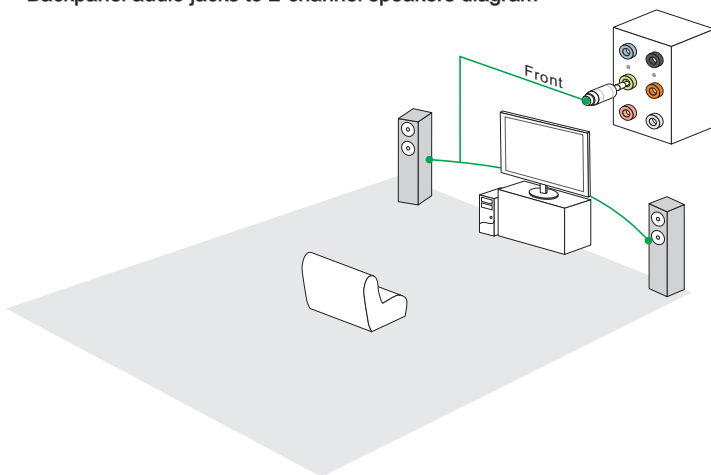


As you know, each jack corresponds to its default setting, you can refer to the next section “Hardware Default Setting”.

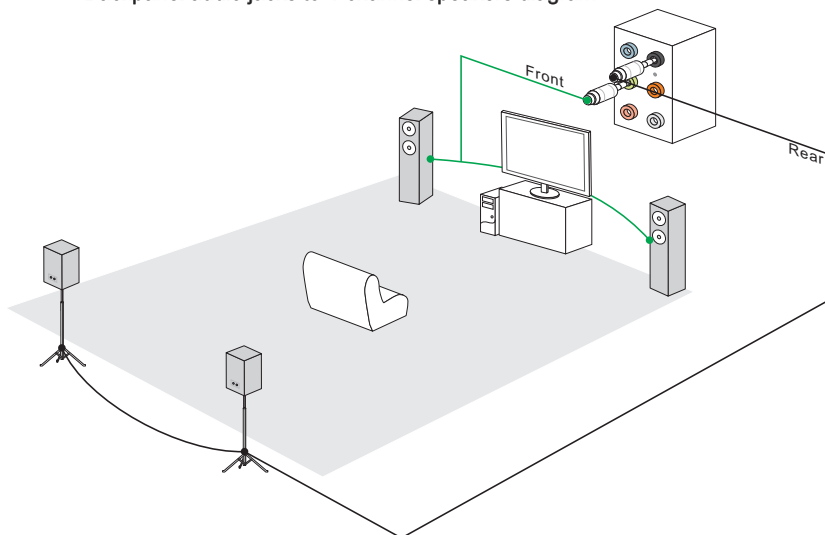
Hardware Default Setting

The following diagrams are audio back panel default setting.

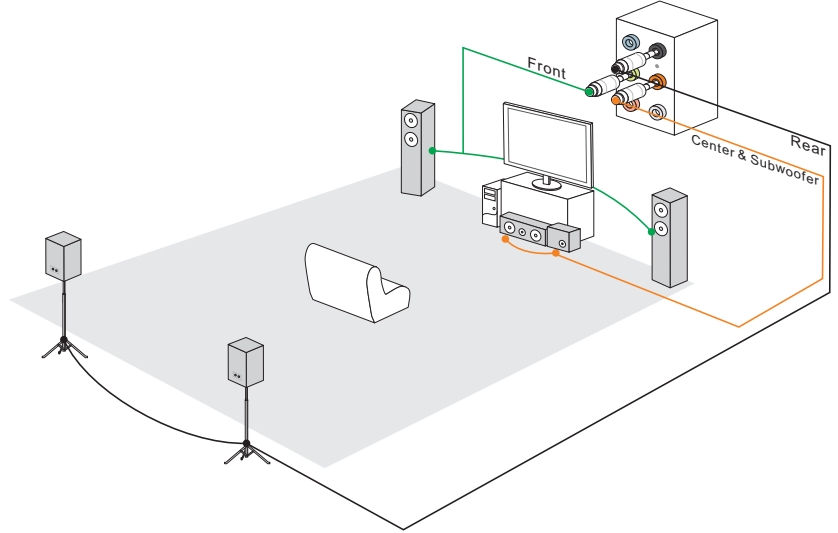
- Backpanel audio jacks to 2-channel speakers diagram



- Backpanel audio jacks to 4-channel speakers diagram



■ Backpanel audio jacks to 6-channel speakers diagram



■ Backpanel audio jacks to 8-channel speakers diagram

